

## Key to common pond invertebrates of the Hudson Valley

(modified from Voshell, J.R. 2002. A guide to common freshwater invertebrates of North America. McDonald and Woodward, Blacksburg, VA; and B.L. Peckarsky et al. 1990. Freshwater macroinvertebrates of northeastern North America. Cornell University Press, Ithaca, NY)

### I. What major group does it belong to?

IA. If the animal has (a) 3 or more pairs of jointed legs; or (b) a recognizable head, or at least jaws or hooks at the front end, it is an **arthropod** (proceed to key A for arthropods)

IB. If the animal doesn't have at least 3 pairs of jointed legs or a head, it is a **non-arthropod invertebrate** (proceed to key B for non-arthropod invertebrates)

### A. Key for groups of arthropods

A1. If the animal has 3 pairs of legs (look carefully, some of the legs may be broken), or no legs, it is an **insect** (proceed to key C for insects)

A2. If the animal has 4 or more pairs of legs (look carefully, some of the legs may be broken), it is a **non-insect arthropod** (proceed to key D for non-insect arthropods)

### B. Key for non-arthropod invertebrates

1a. Animal enclosed in a hard shell....**Mollusks**...go to 2

1b. Animal not enclosed in a hard shell....go to 3

2a. Animal enclosed in a 1-piece shell, usually coiled into a spiral, but sometimes shaped like a wide, flat cone.....**Snails (Gastropoda)**

2b. Animal enclosed in a 2-piece shell.....**Clams and mussels (Bivalvia)**

3a. Animal shaped like a worm.....go to 4

3b. Animal a gelatinous colony, sometimes as large as a football, with small star-shaped individual animals visible....**Bryozoa**

4a. Animal very tough and muscular, obviously segmented, with suckers at both ends of the body....**Leeches (Hirudinea)** (don't worry – most species don't eat people!)

4b. Animal soft-bodied and without suckers.....go to 5

5a. Animal strongly flattened from top to bottom, moves by gliding....**Flatworms (Turbellarians)**

5b. Animal more or less round in cross-section (like a thread), moves by crawling (like an earthworm), often brownish....**Oligochaeta**

5c. Animal more or less round in cross-section (like a thread), moves by thrashing about, clear, usually very small (less than 1 cm long)....**Roundworms (Nematoda)**

### C. Key for insects

- 1a. Without segmented legs... **True flies (Diptera)**
- 1b. With 3 pairs of segmented legs (some may be broken off!)... go to 2
  
- 2a. With large, functional wings... go to 3
- 2b. Without wings, or only with developing wingpads that couldn't be used for flying... go to 4
  
- 3a. Hind wings formed into hard wingcovers; with chewing mouthparts... **Beetles (Coleoptera)**
- 3b. Only parts of the hindwings hardened; with sucking mouthparts... **True bugs (Hemiptera)** (watch out – some of these bite!)
  
- 4a. Animal small (less than 3 mm long), with a “spring” under the abdomen (hind part of the body)... **Springtails (Collembola)**
- 4b. Animal small or large, but never with a “spring” under the abdomen... go to 5
  
- 5a. Animal with 3 long “tails” (look closely – these may be broken off!)... go to 6
- 5b. Animal without 3 long “tails”... go to 7
  
- 6a. Tails as thin as a thread; animal with feathery gray gills on the sides of the abdomen... **Mayflies (Ephemeroptera)**
- 6b. “Tails” fleshy (these “tails” are actually gills); without gills on the sides of the abdomen... **Damselflies (Odonata)**
  
- 7a. Animal large and stout, with a long, extendable underjaw... **Dragonflies (Odonata)**
- 7b. Animal of various shapes and sizes, but never with a long, extendable underjaw... go to 8
  
- 8a. With sucking mouthparts in the shape of a long tube... **True bugs (Hemiptera)** (watch out – some of these bite!)
- 8b. With chewing mouthparts that are not shaped like a long tube... go to 9
  
- 9a. Animal living in a case made of sand, bits of leaves, etc.; antennae very small and hard to see... **Caddisflies (Trichoptera)**
- 9b. Animal free-living without a case; antennae usually clearly visible... **Beetles (Coleoptera)** or **Alderflies (Megaloptera)**

#### **D. Key for non-insect arthropods**

- 1a. Animal ball-shaped, with 4 pairs of legs, often bright-colored, usually less than 3 mm long... **Water mites (Hydracarina)**
- 1b. Animal very small (less than 2 mm long)....go to 2
- 1c. Animal more than 2 mm long.....go to 4
  
- 2a. Animal enclosed in a flattened shell...go to 3
- 2b. Animal tear-drop-shaped or cigar-shaped, not enclosed in a flattened shell... **Copepoda**
  
- 3a. Animal shaped like a tiny seed, without a distinct head... **Seed shrimp (Ostracoda)**
- 3b. Animal with a distinct head or “nose:... **Water-fleas (Cladocera)**
  
- 4a. Animal large (more than 2 cm long), with obvious claws (watch out!)... **Crayfish (Decapoda)**
- 4b. Animal small (usually less than 2 cm long), without obvious claws...go to 5
  
- 5a. Animal flattened from side to side, usually yellow-brown... **Scuds (Amphipoda)**
- 5b. Animal flattened from top to bottom, usually gray... **Sow bugs (Isopoda)**